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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09 853,833	05/10/2001	Salvatore Leonardi	856063.694	6456

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SEED INTELLECTUAL PROPERTY LAW GROUP PLLC
701 FIFTH AVE
SUITE 6300
SEATTLE, WA 98104-7092

EXAMINER

ANDUJAR, LEONARDO

ART UNIT PAPER NUMBER

2826

DATE MAILED: 09/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/853,833

Applicant(s)

LEONARDI, SALVATORE

Examiner

Leonardo Andújar

Art Unit

2826

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8, 17, 19 and 20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 17 and 19 is/are allowed.
- 6) ☒ Claim(s) 1-8 and 20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 05/02/2003 has been entered. The present Office action is made with all the suggested amendments being fully considered. Accordingly, pending in this Office action are claims 1-8, 17, 19 and 20.

Priority

2. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Italy on 05/11/2000. The certified copy of the priority document has been received.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States

4. Claims 1-8 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Hutter et al. (US 4,980,747).

5. Regarding claim 1, Hutter (e.g. fig. 11) shows a substrate 10 wherein a buried layer 12 and an epitaxial region have been formed, and an isolation structure adapted to define a plurality of isolation wells (34, 36) for integrating the components of the integrated device (col. 5/lis. 42-52). The isolation structure comprises a plurality of dielectrically insulated trenches lined only by an oxide layer 18. Also, each trench has an open bottom and a conductive material 53, which is in direct contact with the substrate.

6. Regarding claim 2, Hutter shows that the dielectric trenches are formed at the edges of the isolation wells in contact with the buried layers.

7. Regarding claim 3, Hutter shows that the trenches are formed in intervening areas between adjacent isolation wells in contact with the substrate.

8. Regarding claim 4 Hutter shows that the plurality of trenches are in contact with the buried layer located and are located at each edge of the isolation wells.

9. Regarding claim 5, Hutter shows that the intervening area between isolation wells includes a plurality of trenches in contact with the substrate (col. 5/lis. 42-52).

10. Regarding claim 6, Hutter shows that the plurality of trenches comprise dielectric region (38, 40) surrounding the contact regions.

11. Regarding claim 7, Hutter shows that active components integrated in the intervening regions between the plurality of trenches (col. 5/lis. 42-52).

12. Regarding claim 8, Hutter shows that the isolation structure contacts the buried regions of high or low voltage active components of the integrated device (col. 5/lis. 42-52).

13. Regarding claim 20, Hutter (e.g. fig. 11) shows isolation trench structure formed in a semiconductor substrate 10 having a buried region 12, comprising: an isolation structure formed in the substrate to define a plurality of isolation wells (34, 36). The isolation structure comprises a plurality of trenches 26, each trench having sidewalls lined with a single insulating dielectric material (38, 40) to define a central cavity having an open bottom. Also, Hutter shows a conductive material 53 filling the central cavity and in contact with the substrate.

Allowable Subject Matter

14. Claims 17 and 19 are allowed.

Response to Arguments

15. Applicant's arguments with respect to claims 1-8 and 20 have been considered but are not persuasive.

16. Applicant argues that Hutter does not show a trench lined with oxide only. Nonetheless, Hutter shows this limitation. Hutter (e.g. fig. 5) clearly shows that the trench 26 is lined only by silicon dioxide layers 38 and 40 (col. 5/lis. 56-57). In this case, the term "lined" is interpreted as "to cover the inner surface". Note that the layer 18 covers the trench isolation layers 38, 40 but not the trench 26.

Conclusion

17. Papers related to this application may be submitted directly to Art Unit 2826 by facsimile transmission. Papers should be faxed to Art Unit 2826 via the Art Unit 2826 Fax Center located in Crystal Plaza 4, room 3C23. The faxing of such papers must conform to the notice published in the Official Gazette, 1096 OG 30 (15 November

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1989). The Art Unit 2826 Fax Center number is **(703) 308-7722** or **-7724**. The Art Unit 2826 Fax Center is to be used only for papers related to Art Unit 2826 applications.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Leonardo Andújar** at **(703) 308-0080** and between the hours of 9:00 AM to 7:30 PM (Eastern Standard Time) Monday through Thursday or by e-mail via Leonardo.Andujar@uspto.gov. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn, can be reached on (703) 308-6601.

19. Any inquiry of a general nature or relating to the status of this application should be directed to the **Group 2800 Receptionist** at **(703) 305-3900**.

20. The following list is the Examiner's field of search for the present Office Action:

Field of Search	Date
U S Class / Subclass (es): 257/501,505,506 and 520	09/03
Other Documentation:	
Electronic Database(s) East (USPAT, US PG PUB, JPO, EPO, Derwent, IBM TDB)	09/03

Leonardo Andújar

Patent Examiner Art Unit 2826

LA
9403

ine (lin) *verb, transitive*

lined, lin-ing, lines

1. To fit a covering to the inside surface of: *a coat lined with fur*
2. To cover the inner surface of: *Moisture lined the walls of the cave.*

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